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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/815,884	03/23/2001	Harlan Theodore Jacobs	1327.011US1	7390

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EXAMINER	
JACKSON, BLANE J	

ART UNIT	PAPER NUMBER
2685	

DATE MAILED: 05/04/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/815,884	JACOBS ET AL.	
	Examiner	Art Unit	
	Blane J Jackson	2685	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *12 October 2004*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-41* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-41* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *02 October 2001* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *10/04, 12/04*, 4/03, 6/03.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

1. Applicant's arguments with respect to claims 1-33 have been considered but are moot in view of the amendment requiring new ground(s) of rejection.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 1, 2, 5-12, 16-22, 25 and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tuttle et al. (U.S. Patent 6,078,791) with a view to Little (US 4,740,431).

As to claims 1 and 11, Tuttle teaches a method and apparatus for a combined battery and wireless communications system comprising:

A support structure (figure 2, a transceiver (32), batteries (38 and 40) and antenna (34 and 36) on Support Layer (30), column 7, line 31 to column 8, line 36),

An antenna mounted to the support structure (figure 2, dipole antenna (34 and 36)),

An electronic communications circuit mounted to the support structure and electrically coupled to the battery and the antenna to transceiver radio communications

(figure 1A is the functional block diagram and figures 4A-4C, transceiver IC (32) bonded to the support structure, column 8, lines 12-20).

Tuttle teaches a thin-film battery (column 4, lines 14-19) which are bonded to the support structure (column 8, lines 21-26) but does not teach a first conductive layer deposited on the support structure and a thin film battery deposited as successive thin film depositions over at least a portion of the first conductive layer.

Little teaches a thin film battery deposited as successive thin-film depositions over at least a portion of a first conductive substrate/ support layer, figure 4, column 5, lines 40-49. Little further teaches the thin film battery comprises a cathode layer, a solid state electrolyte layer and an anode layer deposited such that either the anode layer or the cathode layer is in electrical contact with the first conductive layer and the electrolyte layer in contact with and completely separating the anode layer and the cathode layer (figure 4, battery (68), conducting non transparent support/ substrate (62), anode (78), solid electrolyte (80) and cathode (82), column 5, lines 50 to 65).

As to claims 22 and 25, Little teaches the additional element of an energy receiving device mounted to the support structure (figure 4, column 5, lines 40-66, a solar cell mounted to the opposite side of the support/ substrate) and a recharging circuit, the recharging circuit electrically coupled to the battery and the energy receiving device to recharge the battery using energy received by the energy receiving device, figures 1-3, column 5, lines 18-38.

It would have been obvious to one of ordinary skill in the art at the time of the invention to alternatively mount the thin film batteries of Tuttle using thin film deposition

techniques as taught by Little such that an integrated system can be produced in a single continuous process that lends itself to large-scale inexpensive automated production.

As to claims 2 and 12 with respect to claims 1 and 11, Little of Tuttle modified teaches the anode or the cathode or both include an intercalation material or a metal or both, column 3, lines 40-65).

As to claims 5 and 16 with respect to claim 1 and 11, Tuttle teaches the assembly includes a rigid or flexible thin film support member to support integrated circuits, antenna and thin film batteries disposed thereon (figure 2, column 4, lines 5-21) where the flexible support member would inherently bend to match a curved shape.

As to claims 6-8 and 17-19, Tuttle teaches the antenna is deposited on the support structure, incorporated within the IC or adjacent to the IC within a predetermined area of the thin support member (figure 2, column 4, lines 5-14) or the formed on the outer surface or within the outer structure film (column 12, lines 28-46). Tuttle also teaches other antenna configurations in association with the battery to improve the performance of the antenna (column 12, lines 1-8). Even though Tuttle does not specifically teach the antenna is deposited on the battery or on the electronic communications circuit, it would have been obvious to one of ordinary skill in the art at

the time of the invention to position the antenna as taught by Tuttle in an alternative position to best effect fabrication and performance considerations.

As to claims 9, 20 and 26 with respect to claims 1, 11 and 22, Tuttle teaches wherein the electronic circuit includes a recharging circuit that recharges the battery using energy received by the antenna (figure 9, the "battery" being a charge on capacitor (148) is maintained by conventional RF charging circuits on IC (150), energized from a remote source through the antenna, such as an electronic device configured as a radio frequency identification (RFID) transceiver, column 10, lines 37-48).

As to claims 10 and 21, Little of Tuttle modified teaches an integrated solar cell and battery with supporting circuits for the solar cell to charged the battery, figures 1-3, column 5, lines 18-39).

4. Claims 3, 4, 13-15, 23 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tuttle et al. (U.S. Patent 6,078,791) and Little (US 4,740,431) with a view to Kwak et al. (US 6,280,875).

As to claims 3, 4 with respect to claim 1 and 23 and 24 with respect to claim 22, Little of Tuttle modified teaches a cathode layer preferably comprises titanium disulfide and the electrolyte is formed of lithium sulfide based glass but other thin film materials can be employed. Tuttle modified does not clearly teach the cathode layer comprises a

lithium intercalation material or lithium cobalt oxide deposited on the first conductive layer and the electrolyte layer comprises Lipon.

Kwak teaches a thin film rechargeable battery structure of any design size (figure 3, (20), column 3, line 66 to column 4, line 25), where the cathode layer comprises a lithium intercalation material, lithium cobalt oxide deposited or any suitable material on the first conductive/ substrate layer (22) and the electrolyte layer comprises Lipon, figure 3, column 5, line 17 to column 6, line 67.

It would have been obvious to one of ordinary skill in the art at the time of the invention realize in the design of Tuttle modified the alternative battery composition and architecture as discussed by Kwak since the arrangement of the layered components and the materials that comprise each individual layer play an important role in determining the specific capacity, the utility, and the performance of the battery cell.

As to claims 13, 14 and 15, Little of Tuttle modified teaches the method according to claim 11 wherein the depositing of the thin-film battery comprises:

depositing a lithium intercalation material on the first conductive layer as the cathode layer,

depositing the electrolyte layer on the cathode layer wherein the electrolyte layer comprises Lipon, and,

depositing the anode layer comprising a lithium intercalation material on the electrolyte layer (figure 4, thin film battery (68) formed of an anode (78), a solid electrolyte (80) and a cathode (82), column 5, line 40 to column 6, line 1, and using

intercalation compounds and some specific materials: column 3, line 40 to column 4, line 47).

Little of Tuttle modified does not clearly teach the cathode layer comprises a lithium intercalation material or lithium cobalt oxide deposited on the first conductive layer and the electrolyte layer comprises Lipon.

Kwak teaches a thin film rechargeable battery structure of any design size (figure 3, (20), column 3, line 66 to column 4, line 25), where the cathode layer comprises a lithium intercalation material, lithium cobalt oxide deposited or any suitable material on the first conductive/ substrate layer (22) and the electrolyte layer comprises Lipon, figure 3, column 5, line 17 to column 6, line 67.

It would have been obvious to one of ordinary skill in the art at the time of the invention realize in the design of Tuttle modified the alternative battery composition and architecture as discussed by Kwak since the arrangement of the layered components and the materials that comprise each individual layer play an important role in determining the specific capacity, the utility, and the performance of the battery cell.

5. Claims 27-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tuttle et al. (US 6,078,791) and Little (US 4,740,431) and further in view of Lew et al. (US 6,608,464).

As to claims 27 and 29, Tuttle modified teaches an energy receiving device but does not teach the energy receiving device comprises an electromechanical electric generator or magnetic transducer.

Lew teaches an integrated power source layered with thin film rechargeable batteries, charger and charge controller where selection of the source of current delivered to the battery is under the control of an auto select charging unit (figure 10, column 7, lines 7-50). The three current sources are a Solar Cells (88), RF/ Microwave Induction Charger and Miniature Generator (94), figure 3d, inductive charging: column 5, line 62 to column 6, line 4.

It would have been obvious to one of ordinary skill in the art at the time of the invention to expand the energy source of Tuttle modified to include the alternatives of Lew to ensure recharging of the batteries.

As to claims 28 and 30, Tuttle and Little do not teach the energy receiving device comprises an acoustic transducer.

Lew teaches the selection of three sources to source the circuits and charge the battery (figure 10) but does not teach the energy receiving device comprises an acoustic transducer. However, since Lew teaches the idea of a variety of sources, it would have been obvious to one of ordinary skill in the art at the time of the invention to apply any other suitable power source to Tuttle modified to ensure the device has available power to operate.

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. Claims 33 and 41 are rejected under 35 U.S.C. 102(b) as being anticipated by Little (US 4,740,431).

As to claims 33 and 41, Little teaches an integrated battery and wirelessly recharging timepiece apparatus comprising:

a support structure (conducting and non-transparent substrate/ support layer (62) of thin-film battery (68) and solar cell (66), column 5, lines 40-49),

a first conductive layer deposited on a first surface area of the support structure,

a thin film battery deposited as successive thin-film depositions over at least a portion of a first conductive substrate/ support layer, figure 4, column 5, lines 40-49.

the thin film battery comprises a cathode layer, a solid state electrolyte layer and an anode layer deposited such that either the anode layer or the cathode layer is in electrical contact with the first conductive layer and the electrolyte layer in contact with and completely separating the anode layer and the cathode layer (figure 4, battery (68), conducting non transparent support/ substrate (62), anode (78), solid electrolyte (80) and cathode (82), column 5, lines 50 to 65).

A wireless energy-receiving device mounted to the support structure (figure 4, column 5, lines 40-66, deposited solar or photovoltaic cell (66) applied to the opposite side of the support/ substrate), and,

An electronic timepiece circuit mounted to the support structure and including a recharging circuit, the recharging circuit electrically coupled to the battery and the

energy receiving device to recharge the battery using energy received by the energy receiving device (charger: figures 1-3, column 5, lines 18-38, watch and other device loads: column 6, lines 1-12).

8. Claims 34-39 are rejected under 35 U.S.C. 103(a) as being unpatentable over Little (US 4,740,431) with a view to Kwak et al. (US 6,280,875).

As to claim 34-39, Little teaches a cathode layer preferably comprises titanium disulfide, the electrolyte is formed of lithium sulfide based glass and the use of intercalation compounds but other thin film material can be employed to those skilled in the art, column 3, line 40 to column 4, line 49. Little does teach other specific anode and cathode materials with the electrolyte layer comprising Lipon.

Kwak teaches a thin film rechargeable battery structure of any design size (figure 3, (20), column 3, line 66 to column 4, line 25), where the cathode layer comprises a lithium intercalation material, lithium cobalt oxide deposited or any suitable material on the first conductive/ substrate layer (22), the electrolyte layer comprises Lipon and the anode layer may be formed of lithium, silican-tin or other material known in the art, figure 3, column 5, line 17 to column 6, line 67.

It would have been obvious to one of ordinary skill in the art at the time of the invention realize in the thin-film battery deposition techniques of Little the use of other alternative materials as taught by Little or Kwak since the arrangement of the layered components and the materials that comprise each individual layer play an important role in determining the specific capacity, the utility, and the performance of the battery cell.

9. Claims 31, 32 and 40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Little (US 4,740,431).

As to claims 31, 32 and 40 with reference to the claim elements discussed with claim 33, Little teaches an integrated battery, solar cell, charging circuits and small electronic device as a load whereas the load includes a watch, pocket calculator or the like, figure 4, column 5, line 40 to column 6, line 12.

Even though Little does not strictly teach load as a hearing aid, it would have been obvious to one of ordinary skill in the art at the time of the invention to apply the integrated circuit of Little as a hearing aid to utilize the small form factor to apply a power source to a small electronic device.

Conclusion

10. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the

shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Blane J Jackson whose telephone number is (571) 272-7890. The examiner can normally be reached on Monday through Friday, 8:00 AM-5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward Urban can be reached on (571) 272-7899. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Nguyen V 5-2-2005

BJJ

NGUYEN T. VO
PRIMARY EXAMINER